

REMARKS*Status of Claims*

Claims 1 – 44 were original in the application. Claims 2, 3, 7, 9 – 12, 15, 17, and 18 have been cancelled. Claims 21 – 44 have been withdrawn. Claims 1, 4, 8, 13, 14, 16, and 19 have been amended in this amendment. Claims 1, 4 – 6, 8, 13, 14, 16, 19 and 20 are submitted for examination on the merits.

Objections to the Claims

The claims have been responsively amended with respect to each objection.

Rejection Pursuant to 35 USC 102

Claims 1, 4, 5 and 13 were rejected as being anticipated by Kuo US Patent No. 6,623,698.

In regard to claim 1, the Examiner contended that Kuo discloses an apparatus for making a physiological test comprising:

an oral platform 6 ;

a microchip (i.e. matrix of sensors 138, 140) mounted on or in the platform for making medical diagnoses; and

a stick 32 connected to the platform 6 to serve as a handle on the platform 6 for exterior communication (see Figs. 1a, 4a-c & 5a-c; column 6, lines 32-54 &

62-67; column 7, lines 1-20; column 8, lines 53-63; column 9, lines 32-50; column 10, lines 25-31 ; column 16, lines 40-51).

Claim 1 calls for “a stick connected to the platform to serve as a handle or conduit from the microchip on the platform for exterior communication.” The Examiner has asserted that drive shaft 32 of Kuo is such a conduit for providing exterior communication, which in the case of the disclosed embodiment is a base unit with which the claimed apparatus is communicated. Kuo simply states at col. 9, lines 12 – 16.:

“Biased disk 40 and off-centered rod 44, which are mounted on drive shaft 32, impart a vibrating motion to brush head 6. Drive shaft 32, which is driven by a motor 30, also causes oscillation of the bristle elements 4. “

Communication from sensors 138 and 140 are only internal to the Kuo device to a microprocessor 34 by a lead 38. There is no external communication disclosed by Kuo as can be confirmed by reviewing Figs. 5h and 5i and the related specification. Thus, it cannot be sustained the Kuo discloses each and every element of claim 1.

In regard to claim 4, the Examiner contended that Kuo discloses an apparatus where the platform 6 has a plurality of fluidic ports (24, 26) defined therein conducive for communication of saliva to the microchip (see figs. 1c).

What is shown in Fig. 1c is a single port or slot. What is called a front opening 24 and side opening 26 are continuous portions of the same slot cavity and cannot be regarded as a plurality of separate ports since they are indistinguishably defined by a single slot opening. Claim 4 is dependent on claim 1 and is allowable therewith in addition to not be disclosed by Kuo.

In regard to claim 5, the Examiner contended that Kuo discloses an apparatus further comprising a base unit 2 connected to the stick 32 and communicated to the microchip (see fig. 1).

What is characterized as a “base unit” in Kuo is a handle 2 of the toothbrush. Base units 18 as defined in the applicants' disclosure is not only a handle per se, but what is disclosed as an active cooperative device including mechanical support functions. “Chips 14 may interact with an optional base unit 18 if they require additional resources such as power, fluidic, light, computations or communications. Fluidic lines, electrical lines, and optical lines may be connected through the lollipop stick 16. “ The base unit 18 may provide conventional fluidic control, electrical power, light sources, and dispense drugs to the lollipop chip 14. Or the base unit 18 may provide conventional chemical analysis (using other micro labchips not shown), electrical analysis and optical analysis of the oral samples. The base unit 18 may contain conventional batteries, computer chips, displays, communications systems (e.g. wireless, serial), fluidic reservoirs, photonic devices, etc. Furthermore, the base unit 18 may use a tabletop cradle 24 shown in FIG. 2 to recharge batteries, transfer data to a host computer, program the unit, or display results on a large display. In other words, as shown in FIG. 2 several different lollipops 22 and sticks 16 may be interchangeable with one or more different base units 18 depending the application which needs to be served. LollyLab microfluidic chips 14 are designed to be disposable, but may use a non-disposable base unit 18 if desired. A standard interface between the lollipop stick 16 and the base unit 18 allow multiple lab chips 14 to be interfaced to the base unit 18. Different lollipops 22 may be manufactured and distributed by different companies, and

each may contain different microfluidic lab chips 14 (and different candy coatings) to perform different functions. The base unit 18 may use a cradle 24 to recharge batteries, clean internal fluidic lines, communicate with a host computer, or display pertinent information. See paragraphs [055, 065, 066].

Therefore, the base unit as defined in the specification is more than a mere handle 2, but includes further functional capabilities for combination with the microchip. Handle 2 of Kuo is then not a "base unit" as disclosed and thus claim 5 in the context of the specification is not disclosed by Kuo.

In regard to claim 13, the Examiner contends that Kuo discloses a method further comprising communicating the microchip with a base unit 2 (see Figs. 2a-b).

There is no base unit in Kuo with which a microchip communicates. The biosensors in Kuo communicate with the microprocessor or microchip 34 in the toothbrush. There is no other microchip operating in Kuo and hence such communication is impossible. Kuo is a stand alone device which does not provide for communication with any other device in an operative sense.

Claims 1 and 4 are rejected as being anticipated by Doneen et al. US Patent No. 6,102,872.

In regard to claim 1, the Examiner contended that Doneen et al, discloses an apparatus for making a physiological test and/or delivery of drugs comprising:

an oral platform 10';

a microchip 30 mounted on the platform for making medical diagnoses;

and

a stick 26 connected to the platform to serve as a handle on the platform for exterior communication (see figs. 1-3; column 2, lines 33-47; column 3, lines 44-56; column 5, lines 35-44; column 6, lines 17-21; column 7, lines 31-33 & 40-54).

What Doneen actually discloses at the cited col. 7, lines 40 -47, is an indicator film 30, not a microchip 30. Doneen states:

“A preferred embodiment of the subject invention is shown in FIGS. 3 and 4. A device 24 is in the form of a test strip including a support 26. A membrane sac 10', having a structure as described above, is mounted over one end of the support 26 and contains an absorptive matrix 28. Absorptive matrix 28 can include the stimulator of salivary gland secretion, such as sodium citrate. The absorbent matrix 28 is in fluid communication by abutment with a threshold-type **indicator film 30.**”

The detector of Doneen is a chemical glucose strip or film and does not involve any type of on-platform chip detection and processing. It cannot be sustained that Doneen discloses each and every element of claim 1.

In regard to claim 4, the Examiner contended that Doneen discloses an apparatus where the platform has a plurality of fluidic ports 22 defined therein conducive for communication of saliva to the microchip 30 (see fig. 1 ; column 7lines 31-33).

As stated above Doneen fails to disclose the use of a microchip as part of the detector/dispenser unit. Further, “ports 22” are not ports, but microscopic pores in a membrane which are materially different that a plurality of separate fluidic ports. Further, claim 4 depends on claim 1 and is allowable therewith.

Claim Rejections - 35 USC § 103

Claims 6, 14, and 18 - 20 were rejected as being obvious over Kuo ('698) in view of Feller et al. US Patent No. 5,897,492.

In regard to claims 6, 14, and 18 - 20 the Examiner contended that Kuo as modified by Feller teaches interchanging its oral device with other element used for dental or medical functions (i.e. replacing the bristles with a candy shell), and that it would have been obvious to provide a system similar to that of Kuo as modified by Feller with a plurality of base units which are interchangeable with a plurality of lollipops for making a plurality of medical diagnoses since such a modification would amount to a design choice.

The argument of the Examiner is not followed, since neither Kuo nor Feller provide any disclosure concerning any feature of interchangeability of a sensor/microchip with a base unit which can also provide additional operative functionality. One is therefore left without motivation, direction or available inference to provide a system with combined interchangeable elements of claims 6, 14, and 18 - 20.

Claims 8 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo ('698) in view of Feller et al. ('492) further in view of Lundell et al. US Patent No. 5,994,855.

In regard to claims 8 and 16, the Examiner contended that Kuo as modified by Feller as further modified by Lundell discloses an apparatus comprising a data processing communication (34, 35) and display 178 (see fig. 5h of Kuo). The Examiner contended that it would have been obvious to provide a system similar to that of Kuo as modified by Feller as further modified by Lundell with a cradle unit that provides data

processing communication and/or display since such a modification would amount to a design choice or a shifting location of parts.

Lundell discloses a charging unit for an electric toothbrush and nothing more. Feller discloses a candy coated tongue depressor and nothing more. Kuo discloses a stand alone toothbrush with biosensors and an onboard chip and nothing more. What is claimed in claims 8 and 16 is an additional element in a system, namely a cradle unit with the additional functionality of providing additional data processing, communication and/or display beyond that provided by the microchip in the lollipop. It is not a mere shifting of the processor 38 of Kuo to a cradle unit, but a combination of additional active electronic functionality in the cradle unit with the microchip.

Applicant respectfully requests advancement of the claims to allowance.

The Director is hereby authorized to charge any additional fees associated with this communication to Deposit Account No. 01-1960.

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Signature

October 19, 2006

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